THE

HORTICULTURIST.

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THE INFLUENCE OF LIGHT ON VEGETATION.

The influence of light upon growing plants is familiar to observation. The sun is the source of light to our system, but it should be known and considered that the effects produced by his direct rays are not the same as those produced by diffused and reflected light: in other words, the science of the sunbeam and the science of light are two very different things.

According to the theory of Newton, light is an emission of particles from a luminous body. The theory of Young and Fresnel represents it as the undulation of a subtle medium. But a sun-beam is a compound thing. Three distinct principles, if not more, or three modifications of one principle, are discoverable in every ray of sunlight. These are light, heat, and actinism.

When a sun-beam is admitted into a darkened chamber, and received upon a transparent prism, it is decomposed. A prismatic spectrum of brilliant hues is produced, as we know, upon the screen or wall. The three primary colors—red, yellow and blue—are the elements out of which the seven-hued image is formed. If a thermometer is placed in the blue ray of the spectrum it will indicate 56° Fahrenheit in the yellow ray it will rise to 62°, and a little beyond the red ray, it will go up to 79°. But in the undecomposed sunbeam, the temperature is the same everywhere. It is evident, therefore, that there are heat rays, as well as light rays in the sunbeam. But this is not all. If a piece of photographic paper be placed within the spectrum, it will receive the deepest shade where the blue and violet rays fall upon it. Here, then, are rays which produce chemical changes in bodies. They are denominated *actinic* rays, and their influence is named *actinism*.

If we compare a plant growing in the shadowed recesses of the forest, with another fully exposed to the sun's rays, the pale, blanched hue of the former would be at once apparent. Here, then, we discover one of the effects of the light rays. Again, if we take a plant from the open air, and place it in a darkened room, where light is admitted through a single narrow window, a change will soon be visible. The plant loses its healthy appearance and becomes pale. The leaves most distant from the light, lengthen their stalks, and stretch up into a position in which they can obtain more copious draughts of the health-giving

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stream. The whole plant turns toward the window, with an unmistakable yearning for the sun. If it is removed from confinement, and exposed to a full flood of light, its health and vigor returns, and it soon loses its pallid hue, and puts on its proper colors.

In the vegetable world, then, light and color are intimately associated, and the same is true in the animal world. The gorgeous hues of tropical vegetation are painted in the sunny skies of the climes where it grows. The light rays are the chief agents in producing that compound substance in the cells of plants on which their green color depends. Woody tissue will not form, to any available extent, without the influence of these rays. Deprived of them the massive oak would grow up a pallid, fragile plant, without strength or value.

Light stimulates plants to respiration, for they breathe as well as animals, and they repose, like them, in the dark hours of the night. In the day time they inhale the carbonic acid of the atmosphere and breathe out oxygen: in the night, also, they still drink in the same element, but it is in scanty draughts compared with what they take under the stimulus of light.

It has been observed that in the bending of plants towards the light, the blue rays have been found to be most powerful in producing this effect, while the red rays seem to repel, and plants to turn from them. The light which is reflected towards us from the blue sky is polarized, and polarized light possesses peculiar properties which doubtless affect the growth of plants in ways we do not comprehend.

Let us now turn to the heat-rays of the sun-beam. About one-third of those which infringe upon our atmosphere are absorbed by it, so that the air screens us from the full intensity of the sun's heat. As we descend below the surface of the earth, the temperature increases. But at length we reach a stratum where the temperature is always uniform. The caves of the French Observatory have steadily remained at 53° Fahrenheit. They are ninety feet below the surface. Some mines have a perpetual spring. The heat absorbed by the earth's crust in summer essentially modifies the cold in the winter reason.

Heat appears to have great influence upon vegetable irritability. The *Desmodium Gyraus*, which grows upon the banks of the Ganges, moves its leaflets perpetually both by day and by night. But this curious plant is motionless except where the temperature is about 100°. The sensitive plant requires artificial warmth in our northern climate, and although our vegetation is not destitute of instances of this sort of irritability, we have nothing analogous to the Desmodium Gyraus.

When Dr. Franklin placed pieces of different colored cloth upon snow, he found that the sun's rays melted the snow more rapidly beneath some colors than beneath others. The order of absorption of heat by the different colors, is black, brown, green red, yellow, and white. So that black clothing drinks in the sun's warmth more greedily than that which is of a lighter color. Those bodies, however, which readily absorb heat, part with it freely also—in philosophical language, they have high radiating powers.

Heat is the chief agent in producing the trade winds. The heated air of the equatorial region rises into the higher regions of the atmosphere, and colder air rushes in laterally to supply its place. This constant interchange of air between the equator and the poles, and the rotation of the earth, conjointly occasion these well-known winds.

The actinic rays now demand notice. They appear to be especially powerful in producing the germination of seeds, while the light-rays actually seem to be opposed to this development of vitality. The stem of a young plant grown under the influence of the actinic rays remain soft, and extends to a great length without enlarging in diameter. It is for this reason that gardeners sometimes use deep blue glasses to aid cuttings in striking root.

Actinism is less known as to its effects upon the animal kingdom. The different

shades of color in the human race, freckles and sunburn, are all probably dependent, in part at least, upon the actinic rays of the sunbeam. Chlorine and hydrogen gas mingled in combining proportions, do not unite in the dark. But if the mixture is exposed to the light of the sun, they at once combine, and generally with a violent explosion. If the chlorine alone is exposed, for a time, to the sunlight, it will afterwards unite with the hydrogen in the dark.

The actinic rays produce an effect upon the granite rock, as well as upon the delicate organization of the plant. But during the night these effects are wholly, or in part, obliterated, and but for this nocturnal rest the hardest crag would crumble, and in time fall to pieces and perish.

Actinism has furnished us one of the most wonderful and pleasing arts of modern times—the art of photography, The whole mystery of the Daguerreotype process, in its outlines, may be readily comprehended. A polished plate of silvered copper is subjected to the vapor of iodine, and is then transferred, without exposure to the light, to the camera. The image of the object to be taken, rapidly depicts itself upon this prepared plate, which is then removed from its dark receptacle, and exposed to mercurial vapor. The picture now appears, and must be rendered permanent by immersion in a solution of hyposulphite of soda. These are the main principles involved in the art of Photography, and in its different types and forms, although the processes are varied in the production of different kinds of pictures.

In addition to these three principles in the sunbeam—light, heat, and actinism—it is believed by some of the most careful experimenters, that electricity may also be detected.

In the animal kingdom the effects of light upon development and growth are equally apparent and important. But investigations in this direction would lead us into too wide a field for our present purposes.

A GREEN-HOUSE AND GRAPERY COMBINED.

BY GEO. E. & F. W. WOODWARD.

GREEN-HOUSES and Graperies are usually erected as separate structures. While it is desirable that they should be so on extensive places where much accommodation is required, in grounds of moderate extent many advantages are gained by having the houses

Fig. 1.—*Perspective.*

connected. Facility for heating and management, protection of those houses requiring the most heat, by those kept cold or at only moderate temperature, and the ease with which all departments may be visited by the owner and his friends, are all obtained by such an arrangement. In the present instance the Green-house occupies

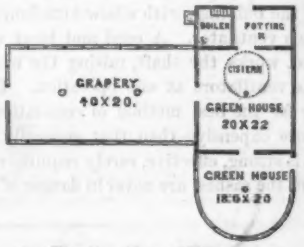

Fig. 2.—*Ground Plan.*

a position east and west, and is protected on its north and most exposed quarter by the Grapery. The boiler located as shown on the plan, supplies heat to all the houses.

The Grapery, not being intended as a forcing or early house, has but one hot water pipe, which will afford sufficient heat to enable the vines to be started two or three weeks earlier in the spring, or if not desirable to anticipate their natural growth, will prevent them receiving sudden checks from frosty nights, which sometimes happen at the latter end of April and beginning of May, after the vines have broken their buds. We can prolong the season also, until about Christmas, in favorable years. Several of the late ripening, and late keeping varieties of the Grape, are intended to be grown, Lady Downes, Barbarossa, Frogmore St. Peters and others. These by the addition of another pipe and proper care in management, could be kept on the vines in fine condition until February, and perhaps March.

The sill or wall plate of the Grapery, is but two feet above the border; thus giving nearly the whole length of cane for fruiting upon the rafter. Side lights are dispensed with, bottom ventilation being afforded by apertures through the brick wall, closed by shutters. The wall is supported on stone lintels, resting on brick piers placed about five feet apart, extending to the bottom of the border, allowing free access for the vine roots to the outside. Ventilation at the top is effected by means of sashes, hung in the roof at the ridge, which are raised and lowered by an iron shaft running the length of the building, with elbow attachments at each ventilator. A cord and lever at one end, works the shaft, raising the whole of the ventilators at one operation. This is by far the best method of ventilation, but more expensive than that generally used. It is strong, effective, rarely requires repair, and the sashes, are never in danger of being blown open and broken by high winds. The floor level of the Green-house is two feet below that of the Grapery, in order that there may be sufficient height at the sides, to place plants on the tables, and bring them near the glass. General collections of plants cannot well be grown in one house; for this reason, we have the house divided by a glass partition. By an arrangement of valves in the hot water pipes, and independent ventilation a different temperature can be maintained in each. Plants requiring a considerable degree of heat will find a congenial location in the central house, while those in bloom, and others to which a cooler atmosphere is more suitable, will be placed at the circular end of the building.

Three rows of heating pipe run around the Green-houses, which will give ample heat in the coldest weather. A propagating table is provided by enclosing a portion of the pipes in the central house. Below the floor is a cistern of 3000 gallons capacity, from which tanks holding 100 gallons each are supplied. The Green-houses are entered through a door and porch on the south, not shown in the engraving, also through potting room and Grapery. The design of these houses gives an opportunity for further addition if desired, by a wing on the south, corresponding with the Grapery on the north. Such an extension would improve the architectural appearance of the whole. An early Grapery might be thus located and be heated from the same boiler. These houses, lately designed and erected by us for John L. Rogers, Esq., of Newburgh, N. Y., form a picturesque and attractive feature in his well kept grounds, and will no doubt be a source of much enjoyment to their owner.

APPLE—BEAUTY OF KENT.

This in one of the most beautiful apples in appearance that we have, and though of second rate flavor, is desirable on account of its size and showiness. Mr. Downing gives the following description of it. The tree grows very strong and upright, moderately productive. Fruit very large, roundish, but flat at the base, and narrowing dis-

tinctly to the eye, where it is slightly ribbed. Skin smooth, greenish yellow, marked with large broken stripes of purplish red. Stalk short, slender, deeply planted in a round, russety, corrugated cavity. Calyx small, set in a narrow basin. Flesh juicy, crisp, tender, with a simple sub-acid flavor. October and November. Of English origin.

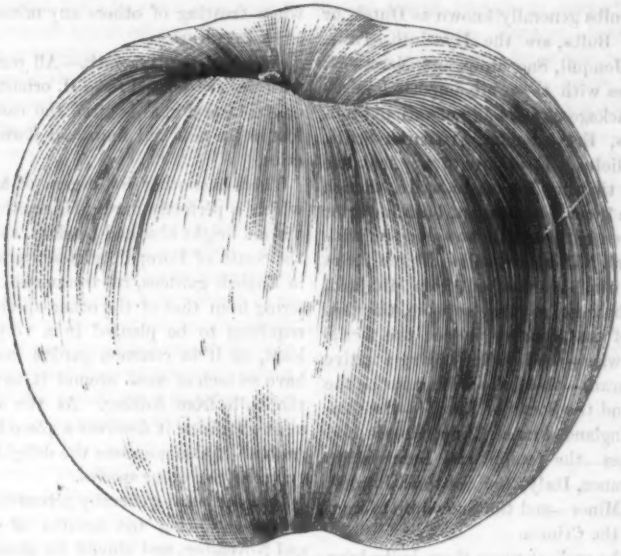

Fig. 1.—*Beauty of Kent.*

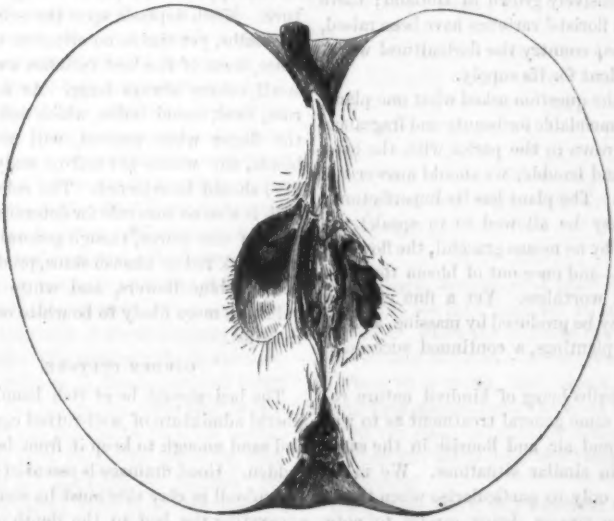

Fig. 2.—*Section.*

WRITTEN FOR THE HORTICULTURIST.

DUTCH BULBS.

BY EDWARD S. RAND, JR., BOSTON.

The bulbs generally known as Dutch, or Holland Bulbs, are the Hyacinth, Tulip, Crocus, Jonquil, Snowdrop, and Narcissus: sometimes with these are imported in assorted packages, a few bulbs of various kinds of Lilies, Erythronium, Fritilaria, Scilla, and Gladiolus. It is only of the first five however that we intend to write, though the same general treatment, both in parlor and garden culture, will be successful with the others. These are called Dutch Bulbs because usually imported from Holland, and not because, as many suppose, they are natives of that country, indeed the fact is far otherwise—the Hyacinth being a native of the Levant—the Tulip indigenous to the Levant and the South of Europe—the Crocus to England, France, Italy, Greece and the Crimea—the Jonquil and Narcissus to Spain, France, Italy, the South of Europe, and Asia Minor—and the Snowdrop to England and the Crimea.

From the earliest times these bulbs have been extensively grown in Holland; there the finest florists' varieties have been raised, and on that country the floricultural world is dependent for its supply.

Were the question asked what one plant, alike commendable for beauty and fragrance, can be grown in the parlor with the least expense and trouble, we should answer the hyacinth. The plant has its imperfections, (if we may be allowed so to speak) the foliage is by no means graceful, the flower is transient—and once out of bloom the bulb is almost worthless. Yet a fine effect in foliage may be produced by massing, and by different plantings, a continued succession of bloom.

These bulbs being of kindred nature require the same general treatment as to water, light and air, and flourish in the same soil and in similar situations. We need, therefore, only to particularise when treating of one species, being careful to note when treating of others any minor differences in culture.

And first the Hyacinth.—All our garden varieties are derived from H. orientalis, the original species, as is often the case, being lost in the new and improved florists' varieties.

There is another little gem of a species which is perfectly hardy, H. amethystinus, flowers bright blue and pendant, a native of the South of Europe, and long naturalized in English gardens, its treatment only differing from that of the other species in its requiring to be planted in a very sandy loam, or if in common garden mould, to have an inch of sand around it to prevent the bulb from rotting. As the color is most exquisite it deserves a place in every garden—it also possesses the delightful fragrance of the other species.

Hyacinths are generally procured of the seedsmen during the months of October and November, and should be planted immediately, both for parlor and garden culture. Much depends upon the selection of the bulbs, yet size is no criterion of excellence, some of the best varieties are always small, others always large. As a general rule, hard, sound bulbs, which feel firm to the finger when pressed, will give good bloom, any which are soft or scaly (like a lily) should be rejected. The color of the bulb is also no sure rule for determining the color of the flower, though generally those with dark red or blueish skins, produce red, pink or blue flowers, and white skinned bulbs are more likely to be white or yellow varieties.

GARDEN CULTURE.

The bed should be of rich loam, with a liberal admixture of well-rotted cow-dung, and sand enough to keep it from becoming sodden. Good drainage is essential; where the subsoil is clay this must be secured by excavating the bed to the depth of three

feet, and filling in with a layer of small stones for about six inches or more, then replace the soil; where the subsoil is gravel no drainage will be required. The bed should slope a little to allow the surface water in winter to run off and should face the south or west, in order to first feel the warm rays of the sun in early spring, and should be sheltered from cold winds; an angle formed by the house, and protected from the north and east is an admirable place for a bulb bed.

Having thus located and provided drainage for our bed, dig it well and pulverize the soil, raking the surface smooth. Lay the bulbs upon the bed, about nine inches apart, in the place each is to occupy, so as to be sure to ensure regular planting, with the name of each (if it is desirable to have named varieties) broadly written with a soft blacklead pencil, on a wooden lable which has been smeared with white lead. Then plant each bulb about two inches deep firmly pressing the earth around it.

If the soil is clayey it is a good plan to surround each bulb with a handful of common sand, which will prevent rotting. The bulbs will immediately begin to make roots, which will continue to grow until the ground freezes. On the approach of severe frosts throw over the bed a covering of litter, old straw or long manure, to the depth of four inches; this will often protect the ground from frost, and thus give the roots a longer season of growth, but care must be taken not to remove it too early in the spring, as the bulbs often grow up into it, and a severe frost may nip the shoots and greatly injure if not destroy the flower. After the flowering season is over, the old flower stems should be cut away, but none of the foliage, which will of itself die away before midsummer. The general rule in the management of bulbs is, the better and larger you grow the foliage the finer will be the flower. When the leaves have all become yellow the bulb should be taken up, carefully dried and put away till Autumn; but if merely a spring show is desired, the best and most common way is to leave the bulb in the ground—where it will bloom every spring, but seldom as finely as if annually replanted. Hyacinths in the open air are usually sturdy enough to support themselves, sometimes, however, they need stakes, which should be young shoots of willow with the bark on, which are not easily distinguishable among the foliage.

PARLOR CULTURE.—IN EARTH.

Select soft-baked eight inch pots, and put in the bottom of each about an inch of broken potsherds, charcoal or small pebbles, as may be most convenient: then fill to the top with a compost of one part loam, one part clean sand, and one part well-rotted cow-manure, with an admixture of bone or horn shavings, if procurable, which gives increased size and brilliancy to the flower. Set one bulb in the centre of each pot, just deep enough to allow the top of the crown to be seen—press the soil around the bulb and give a thorough watering. Set the pots in a dark but warm cellar—supplying them with water from time to time, to prevent them from drying up. The plants should be kept in the dark for four to six weeks, at the end of which time the pots will be full of roots, but the sprouts will not have grown more than an inch. The pots may then be brought into the full sun-light—where the shoot will soon change from yellow to deep green, will grow very rapidly, and produce flowers in about four weeks. Water may be liberally supplied, only taking care not to give so much as to rot the roots.

IN WATER.

Select hard, medium sized bulbs, examine carefully to see that there are no offsets or side bulbs. Place the bulbs in the glasses, which should be filled with rain water, and set them in a warm, dark closet. They should thus remain until the roots at least half fill the glass, occasionally being examined that the water does not become foul or evaporate.

Bring them out to full sun-light as need-

ed, they will bloom in about three weeks. The flowers of bulbs grown in water are generally weaker and less highly colored than of those grown in earth. Bulbs thus grown may be planted in earth as soon as out of bloom, and the bulb being thus much strengthened, blooms better the following year—but usually such bulbs are not worth preserving. A few drops of aqua ammonia added to the water in which the bulbs grow will give a high color to the flower. The water should be changed once in ten days, care being taken that that filled in be of the same temperature with that turned out.

If the roots become coated with green slime, they may be washed in luke-warm water, care being taken not to break or bruise them.

IN MOSS AND SAND.

These modes of growing bulbs are similar to those just described—the general treatment is the same. The moss should be the white sphagnous moss of meadows, as this is peculiarly retentive of moisture, and is neat and clean. The sand used should be white or silver sand, such as is used by glass makers—beach sand will do if it has previously been freshened by frequent washings in fresh water. In planting, the crown of the bulb should be just protruded above the moss or sand. A mode of culture which we have adopted for the past few years seems to combine all the advantages of earth, water and moss culture, and has been so successful that we have no hesitation in recommending it for general adoption. About the twentieth of October, plant the bulbs in earth and put them in the cellar, as above described, being careful to have pots all of one size. Now for the bulb table: let it be of black-walnut with turned legs, so as to be an ornament to the parlor, about four and a half feet long by two feet wide in the clear, so as to hold three rows of eight pots each, let the table be hollow and eight to ten inches deep—all thoroughly joined together and well coated with white lead on the inside, particularly around the joints. Into this table fit a zinc pan of the same depth, with wire handles, which turn down into the pan on each end. About the middle of November bring from the cellar enough pots of bulbs to fill the table, set them in the pan and fill the interstices with common wood moss; when it is level with the top of the pots cover all with some short green moss, such as is found on decayed trees or in deep woods. You have thus a very pretty moss garden with the yellow shoots of the bulbs peeping through. Water copiously every morning, letting it fall from the rose of a small watering pot on to the moss. The water will collect in the pan, the roots of the bulbs find their way out of the holes in the bottom of the pots and riot in the moisture: the shoots grow wonderfully, and you have hyacinths of marvelous size in a moss garden. As soon as a flower fades, gently lift the moss, remove the pot, and in its place put a new one from the cellar. And thus we have bulbs in full bloom from Thanksgiving until they again blossom in the border. A few Narcissus, especially the Polyanthus varieties, add much to the effect. The table should be kept in full sun-light, and may be made of any material or dimensions.

VARIETIES OF HYACINTHS.

Among the hundred or more varieties we do not pretend to make a complete selection. The new and costly varieties are not what we seek, we want a free, showy bloom, and for our purpose single varieties are better than double—the bulbs should cost from a shilling to thirty cents each. The following are good, free blooming kinds, of various colors:

RED.

Rex Rubrorum, Grootverst Acteus, Bouquet Tendre, Mars, Grand Vedette, Rose la Mignonne, Waterloo, Belle Eleonore, Pronkjuweel, Amy.

WHITE.

Glorea Florum, Triomphe Blandine, Anna Maria, Mont Blanc, Victoria, La Virginite, Voltaire, Grand Vainqueur, Konigs Juweel, Miss Kitty.

YELLOW.

Alida Jacoba, Fleur d'Or, Ophir, Bouquet d'Orange, Louis d'Or, Heroine, Canary Bird.

BLUE.

Orondatus, Laurens Koster, L'Amie du Cœur, Emilius, Amicus, Argus, Robert Peel, A la mode, Roi Josaphat, Charles Dickens, Emicus Porcelain Sceptre, Iris, Bouquet Purple.

THE TULIP.

With the exception of the varieties of Tulipa suavolens, commonly known as Duc Van Thol, this bulb is not desirable, nor is it a favorite for parlor culture. The bulbs of the Van Thol are small, and should have the same general culture as hyacinths in earth, only three or four may be planted in a six-inch pot, and the crown of the bulb should be covered; in water they do not succeed, though in sand they will flower well. The flower is scarlet and yellow, each bulb produces one on a stem not more than four inches in height: there are single and double varieties, of which the former are more desirable.

The Sun's Eye Tulip, T. oculis solis, is a dwarf species which is sometimes grown in the window, the flowers are red, with a dark eye, and the bulbs require the same treatment as the Van Thol.

In Garden Culture a bed prepared as directed for hyacinths will do admirably—the soil should be sandy loam with the rotted turf of an old pasture, though they bloom well in any garden soil. They should be planted like hyacinths, the taller growing varieties in the middle of the bed, edging off with dwarf varieties. All the garden varieties are the offspring of T. Gesneriana, and are very numerous and of various shades and combinations of color.

Named varieties may be procured of all florists, varying in price from a few cents to a dollar. For general effect, the Tulip is best grown in masses, which produce a gorgeous appearance when in full bloom.

THE CROCUS.

This is a little gem of a bulb, always welcome with its bright blossoms as the harbinger of spring. There are about twenty-five species (including the autumnal flowering) and numerous varieties.

As a parlor plant, the crocus is very pretty but rather insignificant—it is in the garden it displays its full beauty. If you grow for the parlor it should be treated like a hyacinth, and grown in earth—half a dozen bulbs may be planted in a pot—they should be covered about an inch with soil. Pretty effects are sometimes produced by planting in ornamental pots, the favorite shape of which is that of a porcupine; when the leaves grow they represent the quills, but from the difficulty of making all the bulbs shoot out and bloom at the same time, the appearance is more often bare and ragged. In the garden, the bulbs should be planted in masses or lines, as the flowers are too small to be effective singly.

The following are original species from which most of the varieties have sprung—the Autumnal species are very beautiful and desirable, blooming at a season when all other flowers are gone:

Crocus vernus, lilac, white, or purple.
" versicolor; purple and white.
" biflorus; white and purple.
" minimus; white and purple.
" susianus; yellow.
" sulphureus; "
" luteus; "
" aureus; "
" sativus; pale purple, autumnal flowering, the saffron of commerce.
" speciosus; purple, large flowers, autumnal flowering.

The Crocus is impatient of removal, and the bulbs once planted should seldom be disturbed.

THE SNOWDROP.

This pretty little bulb is a general favorite, blooming in the snow, and always attractive from its grace and delicacy. As a parlor plant it is too small to be of value. In the garden it thrives in any soil; it should be planted in October, in patches, and the bulbs should be left undisturbed. There are double and single varieties of the common species, (Galanthus nivalis) natives

of England. The Crimea snowdrop (G. plicatus) is the finest species, producing very large green and white flowers, but it is not common. All the species have a delicate, peculiar, and very pleasant fragrance.

THE JONQUIL AND NARCISSUS.

Both of these bulbs, the former being only a variety of the latter, are favorites for parlor culture; the treatment required is the same as for the hyacinth, and they may be grown equally well in earth, sand, moss or water. The same soil is also suitable for them. A few plants in the hyacinth case previously described, have a pretty effect. The Jonquil (Narcissus Jonquilla) is a native of Spain—there are both single and double flowered varieties, both are exquisitely fragrant and bloom freely; the flowers are yellow and very showy. There are many species of the narcissus, all of which are valuable border flowers, and most of them bear forcing well.

Those most commonly grown in the parlor are

Narcissus Italicus, the Roman Narcissus; flowers pale yellow, single—or creamy-white, double, and exquisitely fragrant—native of Italy. N. papyraceus, the paper-white narcissus; flowers pure white, single, very fragrant—native of Asia Minor.

Narcissus Tazetta, or Polyanthus Narcissus; flowers white and yellow, very fragrant—native of Spain.

Narcissus Trewianus, or N. Bazelman major; flowers white and yellow, fragrant.

The following are superior florists varieties of the Polyanthus Narcissus:

Grand Monarque; white and yellow.
Mignonne; orange.
Hercules; white and orange.
Grand Primo; white and citron.
Grand Prince; white and lemon.
Soleil d'Or; yellow and orange.

The other bulbs often imported as Dutch bulbs, such as Scillas, Ornithogalum, Lilies, Fritilarias, Iris, &c., require the same general garden treatment as the Hyacinth and Narcissus—all will grow in any good garden soil, but do better with a prepared border of sandy loam. Care must be taken to adapt the depth of planting to the size of the bulb: as a general rule, the crown of the bulb should be covered at least an inch.

Scilla præcox—the early blooming squill—bears forcing well, is adapted for parlor culture, and remarkable for the exquisite blue of the flowers.

HOW TO MAKE A PARADISE IN THE COUNTRY.

BY THE AUTHOR OF LETTERS FROM UNDER A BRIDGE.—CONTINUED.

I AM supposing all along, dear reader, that you have had no experience of country life, but that sick of a number in a brick block, or (if a traveller) weary of the "perpetual flow of people," you want a patch of the globe's surface to yourself, and room enough to scream, let off champagne-corks, or throw stones, without disturbance to your neighbor. The intense yearning for this degree of liberty has led some seekers after the pastoral rather farther into the wilderness than was necessary; and while writing on the subject of a selection of rural sites, it is worth while, perhaps, to specify the desirable degree of neighborhood.

In your own person, probably, you do not combine blacksmith, carpenter, tinman, grocer, apothecary, wet-nurse, dry-nurse, washerwoman and doctor. Shoes and clothes can wait your convenience for mending; but the little necessities supplied by the above list of vocations are rather imperative, and they can only be ministered to in any degree of comfortable perfection by a village of at least a thousand inhabitants. Two or three miles is far enough to send your horse to be shod, and far enough to send for doctor or washerwoman, and half the distance would be better, if there was no prospect of the extension of the village limits. But the com-

mon diameter of idle boys' rambles is a mile out of the village, and to be just beyond that is very necessary, if you care for plums and apples. The church bell should be within hearing, and it is mellowed deliciously by a mile or two of hill and dale, and your wife will probably belong to a "sewing circle," to which it is very much for her health to walk, especially if the horse is wanted for plowing. This suggests to me another point which I had nearly overlooked.

The farmer pretends to no "gentility;" I may be permitted to say, therefore, that neighbors are a luxury, both expensive and inconvenient. The necessity you feel for society, of course, will modify very much the just stated considerations on the subject of vicinage. He who has lived only in towns, or passed his life (as travellers do) only as a receiver of hospitality, is little aware of the difference between a country and city call, or between receiving a visit and paying one. In town, "not at home," in any of its shapes, is a great preserver of personal liberty, and gives no offence. In the country, you are "at home," *will-you nill-you*. As a stranger paying a visit, you choose the time most convenient to your self, and abridge the call at pleasure. In your own house, the visitor may find you at a very inconvenient hour, stay a very in convenient time, and as you have no liberty to deny yourself at your country door, it may (or may not, I say, according to your taste) be a considerable evil. This point should be well settled, however, before you determine your distance from a closely-settled neighborhood, for many a man would rather send his horse two miles farther to be shod than live within the convenience of "sociable neighbors." A resident in a city, by-the-way (and it is a point which should be kept in mind by the retiring metropolitan) has, properly speaking, no neighbors. He has friends, chosen or made by similarity of pursuit, congeniality of taste, or accident, which might have been left unimproved. His literal neighbors he knows by name, if they keep a brass plate, but they are contented to know as little of him, and the acquaintance ends, without offence, in the perusal of the name and number on the door. In the city you pick your friends. In the country you "take them in the lump."

True, country neighbors are almost always desirable acquaintances—simple in their habits, and pure in their morals and conversation. But this letter is addressed to men retiring from the world, who look forward to the undisturbed enjoyment of trees and fields, who expect life to be filled up with the enjoyment of dew at morn, shade at noon, and the glory of sunset and starlight, and who consider the complete repose of the articulating organs, and release from oppressive and unmeaning social observances, as the fruition of Paradise. To men who have experience or philosophy enough to have reduced life to this, I should recommend a distance of five miles from any village or any family with grown-up daughters. In my character of dollar, I may be forgiven for remarking, also, that this degree of seclusion doubles an income (by enabling a man to live on half of it), and so freeing the mind from the care of pelf, removes the very gravest of the obstacles to happiness. I refer to no saving which infringes on comfort. The housekeeper who caters for her own family in an unvisited seclusion, and the housekeeper who provides for her family with an eye to the possible or probable interruption of acquaintances not friends, live at very different rates; and the latter adds one dish to the bounty of the table, perhaps, but two is to vanity. Still more in the comfort and expensiveness of dress. The natural and most blissful costume of man in summer, all told, is shirt, slippers, and pantaloons. The compulsory articles of coat, suspenders, waistcoat, and cravat (gloves would be ridiculous) are a tribute paid to the chance of visiters, as is also, probably, some dollars difference in the quality of the hat.

I say nothing of the comfort of a bad hat (one you can sit upon, or water your horse from, or bide the storm in, without remorse) nor of the luxury of having half a dozen,

which you do when they are cheap, and so saving the mental burthen of retaining the geography of an article so easily mislaid. A man is a slave to anything on his person he is afraid to spoil—a slave (if he is not rich, as we are not, dear reader!) to any costly habiliment whatever. The trees nod no less graciously (it is a pleasure to be able to say) because one's trousers are of a rational volume over the portion most tried by a sedentary man, nor because one's hat is of an equivocal shape—having served as a non-conductor between a wet log and its proprietor; but ladies do, and especially country ladies; and even if they did not, there is enough of the leaven of youth, even in philosophers, to make them unwilling to appear to positive disadvantage, and unless you are quite at your ease as to even the ridiculous shabbiness of your outer man, there is no liberty—no economical liberty, I mean—in rural life. Do not mislead yourself, dear reader; I am perfectly aware that a Spanish sombrero, a pair of large French trowsers plaited over the hips, a well made English shoe, and a handsome checked shirt, form as easy a costume for the country as a philosopher could desire. But I write for men who must attain the same comfort in a shirt of a perfectly independent description, trowsers, oftenest, that have seen service as tights, and show a fresher dye in the seams, a hat, price twenty-five cents, (by the dozen,) and shoes of a remediless capriciousness of outline.

I acknowledge that such a costume is a liberty with daylight, which should only be taken within one's own fence, and that it is a misfortune to be surprised in it by a stranger, even there. But I wish to impress upon those to whom this letter is addressed, the obligations of country neighborhood as to dress and table, and the expediency of securing the degree of liberty which may be desired, by a barrier of distance. Sociable country neighbors, as I said before, are a luxury, but they are certainly an expensive one. Judging by data within my reach, I should say that a man who could live for fifteen hundred dollars a year, within a mile of a sociable village, could have the same personal comforts at ten miles distance for half the money. He numbers, say fifteen families, in his acquaintance, and of course pays at a rate of fifty dollars a family for their gratification. Now it is a question whether you would not rather have the money in board fence or Berkshire hogs. You may like society, and yet not like it at such a high price. Or (but this would lead me to another subject) you may prefer society in a lump; and with a house full of friends in the months of June and July, live in contemplative and economical solitude the remainder of the year. And this latter plan I take the liberty to recommend, more particularly to students and authors.

THE CARNATION,—ITS HISTORY AND CHARACTER.

BY AN AMATEUR FLORIST.—CONCLUDED.

III. ITS CULTURE.

Why is it we so seldom see a good collection of Carnations in our gardens? This question is answered by most persons, by saying that the climate does not suit them. I am inclined to think this a mistake. In Germany the Carnation is raised in very great perfection, and the climate there is exceedingly like our own.

I am well convinced that it is not the climate. I am also prety confident that it arises from the too trifling care bestowed on this plant.

The Carnation is treated by most persons like a common Pink, or hardy border flower, I am sorry to say, that with this treatment it will not succeed here, and does not succeed either in England or on the Continent. There are, to be sure, some few hardy kinds, and among them the Picotees figure largely, which will answer very well in the open border, with a slight covering in winter

But to have a good variety of the best Carnations, they cannot be grown otherwise than in pots.

And are they not more truly worthy of this care than most of the poor starved things that figure among green-house plants? Half the care bestowed at the present day, by the numerous admirers of the Fuchsia, would afford us the most charming and perfect Carnations.

Well then, I must commence by saying, that as good a soil as need be for this plant is made by observing the following proportion, viz., two barrowfuls of fresh loamy soil, (or, what is much better, the soil made by rotting down sods,) two barrowfuls of thoroughly rotted stable manure—that from a spent hot-bed is excellent, and one barrowful of clean sand. Mix the whole very thoroughly together, throwing out the lumps, but not sifting it. You may, if you please, sift a small quantity to place on the top of the pots.

I shall speak of the propagation of this plant directly. I am now supposing the layers to have rooted sufficiently to be taken off, which they usually are about the first of September. You must then separate the layers from the old plant with a knife, lift them with a transplanting trowel, trimming off carefully any decayed or broken parts, and pot them in the soil already described, in half-pint pots, one plant in each pot. Use bits of charcoal for the drainage—in other words, for covering the hole in the bottom of the pot.

The pots should all be placed together, in a cool and rather sheltered position, where they can be shaded for ten days. The plants must be pretty liberally supplied with water from this time till the middle of October, when they will be well established in the pots.

Next, for their winter quarters. This, though simple enough, is yet a matter of great importance; for unless it is carefully attended to, you may lose your whole stock in one winter's day.

The best way of keeping the Carnation through the winter, is in a common hot-bed frame with glass lights. Such a frame three feet by eight, will hold a great many of these pint pots, each holding a young rooted plant.

Now, the great points in keeping the Carnation through the winter, are, to keep it cool and dry, and in such a condition that it will not be exposed to sudden changes of weather. A severe frost will not hurt it at all, if the plant is kept quite shaded in the frame till it has had time to thaw out *very gradually*.

The most successful mode of keeping this plant in winter is pursued by a friend of mine, and is as follows: He chooses a common hot-bed frame, and sinks it nearly even with the surface of the soil, or at least not rising more than three inches above it, in a cool, rather shaded, *northern* exposure. He takes out the soil in the frame, about ten inches deep, makes the ground quite level and hard with a pounder. Than he cements the floor over with cheap common mortar, made of lime and loam mixed with some coarse sand. This he lays on about an inch or two thick, bringing it up snugly to the sides of the frame all round.

The advantages of this hard mortar floor are great. It keeps the plants quite free from the bad effects of accumulated dampness, which gathers in a common frame when the pots are set on the earth. Hundreds of Carnations die off suddenly in winter from this cause, and the grower is unable to account for it. On the mortar floor they are always dry; besides this, it prevents mice from getting in the frame. These little animals are very fond of Carnations, and will, if they find their way into a collection in winter, soon devour a great number.

The frame being ready, the plants are moved into it about the middle of October, or as soon as the nights become frosty. For some days, or in short till severe weather sets in, the lights need only be put on the frame at night. In the mean time water the plants moderately, as often as they appear dry. As soon as winter commences, shut up the frame with the lights. Upon

the top of these place two layers of matting, and over all lay a large shutter or cover of rough boards.

Here they will remain till the spring opens. I think it best never to open the frame during severe freezing weather. On all fine mild dry days, during the winter, you may admit air freely to the plants, but never the sun. Raise the glass, and replace the shutter for a few hours to keep out the sun's rays. They will need but very little water during the winter, unless the weather is very mild. When, by the pots appearing dry, you observe that they do need it, supply them very sparingly. If they are kept shaded and cool, they will make little or no demand for water during the winter.

If these directions are followed, you will find your plants in excellent healthy condition at the opening of the spring. When this season comes round, admit air at the beginning plentifully, but do not let in the sun all at once, only by degrees, till the plants are able to bear it.

At the beginning of April, they must all be shifted into larger pots for blooming. The soil that should be used, I have already spoken of. I will only add, that in potting the Carnation, *the earth should always be pressed down quite firmly* around the plant with the fingers. Experience has proved to me that this is quite an essential point.

In July you will have the satisfaction of seeing your plants come into full bloom—and a sight of rare and wonderful beauty it is, if the collection is a large one. Before this time, you will have tied up every strong flower stem to a neat small stake, and you should have taken the precaution to pinch off all superabundant, weak or unnecessary buds, leaving only the strongest. The latter will then have all the juices of the plant to support them, and will come out surprisingly rich and perfect.

IV. ITS PROPAGATION.

About the middle or last of July, the beauty of the bloom will be over. Now commences the layering, to furnish a stock of plants for the next season. New varieties of the Carnation are produced from seed; but this is a tedious process, as only one seedling in ten thousand ever turns out a first rate flower. Layering is, therefore, the mode adopted for continuing all sorts of established reputation.

It is indeed quite a simple process. The strongest and longest of the young shoots (called the *grass*) are selected. Make a small furrow in the loosened soil of the pot; bend down the shoot to find what part will be covered in the furrow; then carefully strip off the leaves of the portion to be buried. With a sharp penknife make the tongue or incision, commencing just below a joint, halving the stem by an oblique cut upward, the incision extending about an inch. Next, with a small hooked peg, fasten down the shoot in the furrow, burying the incision not more than three-fourths of an inch. Cover the whole with a little fresh soil, which should be pressed gently around the shoot, holding the top of the shoot that remains out in a nearly upright position. Give it a little water, and the whole is complete. Every evening afterwards, the layers should be regularly moistened. In about six weeks they will be ready for potting, as I have already described. The old roots, after layering, are worth little, and are usually thrown aside.

Whoever will follow these directions, cannot fail of success in growing all the finest varieties of this very choice plant.

The Picotees, generally, as I have already remarked, may be grown with very good success in a border in the open air; and I may add a few of the hardier Flakes and Bizarres. The soil may be the same as I have already pointed out for the culture in pots. In this case, I have usually found it best to allow the layers to remain attached to the parent plant all winter—enclosing the whole bed with a rough frame, a few boards and branches of evergreens thrown over the top. In the spring, a new bed should be prepared, and the layers taken off and transplanted into it.

AMONG THE TREES.

BY C. N. BEMENT.

Among the studies of trees we cannot fail to be impressed with their importance, not only in the beauty of landscape, but also in the economy of life; and we are convinced that in no other point of the vegetable creation has Nature done so much to provide at once for the comfort, the sustenance, and the protection of her creatures. They afford the wild animals their shelter, and their abode, and yield them the greater part of their subsistence. They are indeed, so evidently indispensable to the wants of man and brute, that it would be idle to enlarge upon the subject, except in those details which are apt to be enveloped. In a state of nature man makes direct use of their branches for covering his tent, and he thatches it with their leaves. In their recesses he hunts the animals whose flesh and fur supply him with food and clothing, and from their wood he obtains the implements for capturing and subduing them. Man's earliest farinaceous food was likewise the product of trees; for in his nomadic condition he makes his bread from the acorn and the chestnut; he must become a tiller of the soil before he can obtain the products of the cereal herbs. The groves were likewise the earliest temples for his worship, and their fruits his first offerings upon the divine altar.

As man advances nearer to civilization trees afford him the additional advantage which is derived from their timber. The first houses were constructed of wood, which enables him by its superior plastic nature, compared with stone, to progress more rapidly in his ideas of architecture. Wood facilitates his endeavors to instruct himself in art, by its adaptedness to a greater variety of purposes than any other substance. It is, therefore, one of the principal instruments of civilization which man has derived from the material world. Though the most remarkable works of the architect are constructed of stone, it was wood that afforded man that early practice and experience which initiated him into the laws of mechanics and the principles of art, and carried him along gradually to perfection.

It is in these relations, leaving their uses in economy and the arts untouched, that we would now speak of trees. We would consider them as they would appear to the poet and the painter as they are connected with scenery, and with the romance and mythology of Nature, and as serving the purposes of religion and virtue, of freedom and happiness, of poetry and science, as well as those of more taste and economy. We are persuaded that trees are closely connected with the fate of nations, that they are the props of industry and civilization, and that in all countries from which the forests have disappeared the people have shrunk into indolence and servitude.

Though we may not be close observers of Nature, we cannot fail to have remarked that there is an infinite variety in the forms of trees, as well as in their habits. By those who have observed them as landscape ornaments, trees have been classified according to their shape and manner of growth. They are round-headed, or hemispherical, like the oak and the sycamore; pyramidal, like the pine and the fir; obeliscal, like the arborvitæ and lombardy poplar; drooping like the white elm and the weeping willow; and umbrella-shaped like the palm. These are the natural or normal varieties in the form of trees.

Of the round-headed trees that extend their branches more or less at wide angles from their trunk, the oak is the most conspicuous and the most celebrated. To the mind of the American, however, the oak is far less familiar than the elm as a way-side tree; but in England this tree, which formerly received divine honors in that country, is now hardly less sacred in the eyes of the inhabitants on account of their familiarity with its shelter and its shade, and

their ideas of its usefulness to the human family.

It is remarkable for the wide spread of its branches and its broad shade—for its suggestiveness of power, and consequent expression of grandeur. It is allied with the romance of early history; it is celebrated by its connexion with the religion and religious rite of the Druids—with the customs of the Romans, who formed of its green leaves the civic crown for their heroes, and who planted it to over-shadow the temple of Jupiter; and many ancient superstitions give its name a peculiar significance to the poet and the antiquary. From its timber marine architecture has derived its most important aid, and it has thereby become associated with grandeur of commerce and the exploits of a gallant navy, and is regarded as the emblem of naval prowess. The oak, therefore, to the majority of the human race, is beyond all other trees, fraught with romantic interest, and invested with classic and historical dignity.

The American continent contains a great many species of oak in its indigenous forest. Of these the white oak bears the most resemblance to the classical tree, in its general appearance, in the contorted growth of its branches, and in the edible quality of its fruit. But the red oak, the most northerly species, exceeds all others in size. No other attains so great a height, or spreads its branches so widely or surpasses it in regularity of form. As we advance South, the white oak is conspicuous until we arrive at North Carolina, where forests and wayssides exhibit the beautiful evergreen oak, which with its slender undivided leaves, the minute subdivisions of its branches, and its general comeliness of form would be mistaken by a stranger for a willow. A close inspection, however, would soon convince him that it has none of the fragility of the willow. On the contrary, it is the most noted of all the genus for its hardiness and durability, being the identical Live Oak which has supplied our navy with the most valuable of timber. At the South the Evergreen Oak is a common way-side tree, mingling its hues with the lighter green of the Cypress and sombre verdure of the Magnolia.

The oak exceeds all other trees, not only in actual strength, but also in that outward appearance by which this quality is manifested. Hence it is regarded as the Monarch of trees, surpassing in all those qualities that indicate nobleness and capacity. It is the emblem of strength, dignity, and grandeur: the severest huricane cannot overthrow it, and by destroying some of its branches, leaves it only with more wonderful proofs of its resistance.

THE CHESTNUT

Is one of the most majestic trees in the American forest, remarkable, like the oak, for its broad extent of shade. In some part of the country it is one of the most common standards in the field and pasture, having been left unmolested on account of the value of its fruit and the comparative inferiority of its timber. The foliage of this tree is dense and flowing and peculiar in its arrangement. The leaves are clustered in stars, of from five to seven, on short branches that grow from one of greater length. Hence, at a little distance, the whole mass of foliage seems to consist of tufts, each containing a tassel of long pointed leaves, drooping divergently from a common centre of the leaves in the same manner, and by their silvery green lustre giving pleasing variety to the darker verdure of the whole mass.

THE HICKORIES.

There are few vegetable productions of any country which unite so many valuable properties as our hickories or walnuts. Entering as they do so largely into the composition of our woods and forests they contribute to adorn our landscape scenery, supply us with a delicate condiment in their fruit, and from the wood they add very essentially to our domestic comfort, and furnish a material of the highest utility in various arts and manufactures. The prodigality with which it has been applied to

these various purposes has had the effect of rendering the above stores of these valuable trees comparatively scarce of late years, as might be expected, and we may have ere long to lament the extermination of most of the kinds unless some measures or means are resorted to of reproducing them, or a greater degree of economy should be employed in their consumption.

The hickories are valuable timber trees, with large compressed leaves, having from five to fifteen, but usually not more than eleven leaflets. Its fruit is a large roundish nut, the husk of which opens, partially or wholly, of itself by four seams.

The hickory is peculiar to America. The nearest approach to it is the European Walnut. In many respects it is amongst the most valuable of our trees. It is always a stately and elegant tree; and the several species exhibit so great a variety of appearance and foliage, that they have almost the interest of a forest. Few trees contribute so much to the beauty of the woods in the autumn. The colors of all at that season are rich, and each species has its own. The smoothness, closeness, and hardness of the grain of the wood give it great value in the arts, and for fuel it holds unquestionably the first place. The fruit of some of the species, even in the unimproved condition of its forest state, vies with the best of foreign nuts, and it is destined, doubtless to be greatly improved by the resources of cultivation.

The Pig-nut Hickory is one of the largest trees in the United States, and is most abundant along the Atlantic States. Its nut is very small, and the shell so hard and thick as to render it of no value. The wood, however, is extremely valuable, as it is considered by manufacturers to be the hardest of the hickory tribe, and strongest, and is in much request for such uses as require strength and tenacity. It is much used for screws, cogs of mill-wheels, rake-teeth, axles, and handspikes, for which purpose it is particularly well adapted. Hoops for casks and barrels are always made with us of the young hickory, and it is beyond calculation what quantities are consumed for this object and exportation. For fuel there is no wood which approaches it, and the unlimited consumption of it for this purpose, together with the destruction of the young saplings for hoops is rapidly causing its extermination. Very little attention, as yet, has been paid in cultivating it, though for the sake of preserving its timber, and the excellence of its fruit, it deserves the care of proprietors of lands. They can easily be raised from seed, but it is necessary to plant the nuts while fresh, and soon after they have fallen from the tree, they otherwise lose their power of germination. It is very difficult to increase them by transplanting, as they seldom survive their removal.

CITY MARKETS.

The condition of our markets, the facilities afforded for daily providing, the supply and quality of food, and the cost, are matters the of greatest importance to every householder in our city. The economical question, at any time, is of larger magnitude than any of our readers, who have not given careful attention to the subject, could possibly imagine. The amount expended in any year for the products of our farms and gardens, is enormous, and the present high prices of every article that enters into the household consumption, carry up this amount to a startling figure.

It is true that the first cost of these products—the price paid to the producer—is less in this country than in Europe, and for this reason the expenses of living here, where the quality and amount of food is the same, are less than in the European cities.

But the difference lies in this. As our system of markets is managed, or rather mismanaged, by the city authorities, nearly all our supplies come to us through the hands of forestallers and middle-men, who combine to take intolerable advantage of the consumer, and to charge enormous profits. While in every European city the authorities are exerting themselves to lessen as much as possible the price of food, especially to the industrial and laboring classes, our authorities are throwing every obstacle in the way of cheap and convenient markets, and they manage those we have entirely in the interests of corrupt officials and political hangers-on.

In the early history of our city, the markets were regarded and intended to be managed for the benefit of house-keepers who buy for their own consumption; and the Common Council, in 1735, passed an ordinance forbidding those who buy to sell again to enter any of the city markets till afternoon, so that housekeepers could provide themselves daily, during the morning at first hands; and a penalty was inflicted upon every one who violated this ordinance. But we live and suffer under a very different order of things.

And our country readers who send us their grain and cattle, their vegetables and fruits, and the products of the dairies and poultry yards, will bear in mind that they are, in no sense gainers, from the enormous profits we pay for the daily supplies of our tables. These profits go to enrich a class which stands between them and us,—a class which is of no advantage to either, and would as readily and unscrupulously overreach and cheat them as ourselves.

It is not so in Europe. Paris has twelve times the market facilities of New York and Brooklyn. In the Paris markets $85,000,000 worth of fresh meats, poultry, game, vegetables, fruits, butter, eggs, are disposed of annually. The first cost of these articles in New York is eight and a half per cent. less than the first cost of the same articles in Paris; yet what is there valued at $100, is retailed to the consumer at $124, an advance of twenty-four per cent., while in New York, the same articles costing but $88, are retailed to the consumer for $184.80, a difference of $75.68 in favor of Paris on every $100 worth of produce.

If we apply this difference to the whole amount of such articles required for the supply of New York for the year 1863, its magnitude will swell almost beyond comprehension. During that year there were supplied to New York, and slaughtered in the city, 306,179 beeves, cows and calves, 519,316 sheep, 1,101,647 swine, the aggregate dressed weight of which was 379,124,647 pounds. There were also required and furnished 54,160,671 pounds of *dressed meats*, the aggregate first cost of all which was $35,081,184. The value of poultry, game, fish, fruits, vegetables, and other perishable food was quite as much, and probably more than of meats, amounting altogether to over $70,000,000, and for which the consumers in New York pay over $147,000,000. For the same amount of food the consumers in Paris would have paid only $86,800,000, a saving to them of $60,200,000, upon the supplies of one year. Startling as this is it is absolutely true, easily demonstrated, and beyond all contradiction.

It is well known that the up-town consumers of this city pay a much higher rate for all market articles of domestic use than the people of Baltimore, Philadelphia, and other chief cities. It is stated on good authority that the average difference between Philadelphia and New York is fully forty-five per cent. The value of market articles, in first hands, is estimated at $70,000,000. The citizens of Philadelphia save forty-five per cent. of this, owing to their numerous, large, and covenient markets. Divide this saving among our million of population, and it amounts to $31.50 each year, to every man, woman and child in the city. This shows that New York, and especially her industrial classes, are carrying a burden which is fast becoming intolerable.

It is time, then, we think, that this subject is taken in hand by the "Citizens'," or some other association. Convenient uptown markets should be established, and the whole system of abuses by middle-men and forestallers should be swept away. The country people should have the opportunity to sell their fresh, wholesome, cheap produce directly to the citizens. A fair and honest competition would then prevail in the place of the combinations which now control prices. When we can buy at first hands, then consumers will reap the advantages of abundant crops. As it is, prices never fail to go up, when there is a scarcity of supply, or a depreciation of the currency, or any other cause to enhance cost, but they rarely fail to *stay up*. It is the business of the middle-men to monopolize the traffic, and see to it that prices never go down, however cheap the first cost of food may be.

EDITOR'S TABLE.

To Contributors and Others.—Address all Communications, for the Editorial and publishing departments, to Geo. E. & F. W. Woodward, 37 Park Row, New York.

This number of the Horticulturist closes the Nineteenth Annual Volume, and with it expires the subscriptions of many of our readers, all of whom we hope to hear from at an early day, and we hope each one will send, with his own name, one or more additional new subscribers. We can promise all, that the volume for 1865 will be well worthy of their attention. The leading article for the January number will be from the author of "My Farm of Edgewood," and articles from the same pen will appear at frequent intervals. Mr. Edward S. Rand, Jr., of Boston, author of "Flowers for Parlor and Garden," will prepare for us an article for each number of the new volume. Mr. Edmund Morris, author of Ten Acres Enough, Mr. A. S. Fuller, author of the Grape Culturist, and others, comprising the best practical talent in the country will write regularly for our columns. Other arrangements have been completed by which the general contents will be sound, able and practical, and illustrations will not be spared whenever necessary. We mean to make the twentieth volume the best of the series; we have the talent, ability and intention to do so, and whatever we undertake to do we mean to succeed in.

We desire to call the attention of our readers to the fact that we are now the New York Agents for all the Agricultural and Horticultural Papers and Periodicals heretofore found at Mr. C. M. Saxton's, of 5 Barclay Street, N. Y. *His list of subscribers to the* Horticulturist *will hereafter be supplied from this office, and all renewals should be sent here.* Mr. Saxton has gone into business at St. Louis, and will act for us in extending our Western circulation. Those of our readers who wish to add to their list of Papers on rural matters, can be supplied from this office with the *Country Gentleman*, *Cultivator*, *Gardener's Monthly*, *Hovey's Magazine of Horticulture*, *Rural New Yorker*, *and American Stock Journal*, and all papers on similar subjects, at the regular subscription rates. We also keep on hand or mail post paid to any address on receipt of publishers' prices every book published on subjects relating to Agriculture, Horticulture, Landscape Gardening, Rural Architecture,

&c. Prices will be furnished for any book not on our advertised list.

Among the Grapes.—The fruit farm of Mr. Knox is situated on the south slope of Coal Hill, about a mile south of the Monongahela Bridge, and the way thereto, by a winding road which ascends the hill, is like the place the darkies sing about—a hard road to travel, as we have proved on divers occasions. It is a right fruit soil, being very strong in texture and composition, well up from bottom waters, and properly exposed to the sun. Upon this place fruits ripen early for their latitude; we visited here early in August of this year, and at that time tasted ripe Hartford Prolific, Delaware and Concord grapes from the main vineyard.

To begin with the earliest of the staple varieties, we name the Hartford Prolific, which is hardy, vigorous, and quite productive, and because of its earliness is a very profitable fruit for market, though the quality is not first-rate.

Next in season to the latter come the Delaware, Concord and Union Village. The Delaware sells entirely upon its merits. The fruit bunches were very fair, and covered the trellis with their amber clusters. The Union Village here grows to a very large size, and on account of its great size and superb style sells higher by the eye than any other variety upon the counter. The Concord is after all the great staple mid-season grape of Mr. Knox's tables. Of all the customers which we saw constantly coming in for fruit, three out of every four, (if not more,) called for the Concord, though it was side by side with the Delaware upon the same table and sold for the same price. In Mr. Knox's vineyard the Concord ripens a delicious melting pulp, a sweet and plentiful juice, with just enough of a strong aromatic smack to please the palates of people who eat with their mouths. The epicure would choose the Delaware for its delicate saccharine, dainty spirit and thin skin, and the well ripened Catawba for its brilliant and positive boquet, but people of good stomachs and good appetite call for the Concord, and there is no use in questioning their taste. The Concords upon Mr. Knox's trellises were a sight to behold; the vines cover the entire trellises from a foot above ground to eight feet in height, and upon his oldest vines thus trained there was a wall of purple clusters from the bottom to the top.

For an amber grape, next to the Delaware is the Diana, which makes a vigorous growth and produces very well. As a table grape the Diana is not equal to the Delaware in fineness or the Catawba in sprightliness, but as a late keeper it is superior to both. Mr. Knox says if he could have but one grape for market purposes he would choose Concord; for the second, Delaware; third and fourth, Hartford Prolific and Union Village; fifth, Diana.

The Anna is a fine white (or green) grape—indeed a sample which we took from Mr. Knox's vineyard and presented to one of our most critical pomologists in Cleveland was promptly pronounced the best specimen of the Anna he had ever tasted, and the only specimen he had ever tasted that was perfectly ripe. For amateur purposes no vineyard is complete without the Elsinboro. The bunches are long and open, the berries smaller than the Delaware, the color a deep blue-black like wild frost grapes, but with a gamy pith and spirit that tickle the palate and tempt the eater to gobble his crop full. For a person who is right fruit hungry we commend the Elsinboro. The Herbemont upon Mr Knox's grounds is monstrously prolific; great solid bunches, ready to burst with rich red juices, hanging in ropes of clusters all over the vines. The Herbemont is too tart for a table grape, and the vine requires to be laid down and covered in winter.

We have thus gone over the leading varieties of Mr. Knox's staple crop; he has many others, too well known to need comment, or too little known to have acquired a place in pomological popularity; and now

we come up out of the vineyard with the stains upon our lips and upon our hands to show how like a cannibal we have done battle in this slaughter of the Vitian gods, or, (shall we confess to a better interpretation in our own mind,) how with gentle violence we over pressed the nectared lips of the willing goddesses who yield their ripened virgin life to give us a foretaste of the immortal. There now, we are getting sentimental again and will stop this talk lest some one should say we are full of new wine, when the truth is we are only full of ripe grapes.—*S. D. Harris, Ed. Ohio Farmer.*

A Monster Fruit Can.—The Cleveland *Herald* has the following account of a novel structure now going up in that city: "The building is eighty feet by forty-four and a half, the side walls being twenty-two feet high. The front of the building, occupying about one-fourth of the whole size, is to be used as a store, or ordinary warehouse, and will be constructed in the ordinary manner. The remainder of the building is to be walled entirely with iron, perfectly tight, and di-divided from the front part by similar walls. Within this enclosure is built another building, also of iron, with its walls about three feet distant from the walls of the outer building. The inner building is divided by iron walls into several smaller rooms, each of them being perfectly gas proof. The ground beneath the building was first packed with wet earth, the beams laid in coal tar, and the surface of the earth will be covered with coal tar. The space between the ground and flooring will then be packed tight with sawdust, as will be the space between the outer and inner walls, and the hollow space in the iron lined doors. Overhead will be packed tightly with ice, which will be congealed, by a peculiar process, into a solid mass of hard ice, seven feet thick.

"When all is completed the small rooms will be filled with fresh fruits, such as apples, grapes, &c., the oxygen of the atmosphere withdrawn by chemical process, and the room hermetically sealed. The vivifying elements being withdrawn, and the temperature being kept down by the peculiar process to about thirty degrees, the fruit remains perfectly fresh, until the season for fresh fruit having passed away, a high market is open for them, when the chambers are opened as wanted, and the fruit taken out as fresh as when first gathered,

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A Chinese Gentleman's House.—He first took us to his country house, now uninhabited. It was the perfect residence of a Chinese gentleman. There was a very large garden with bamboo hedges and large fish tanks, edged with walls of blue brick, and perforated tiles. His pigs were in admirable condition, and as beautiful as the Prince Consort's at Windsor. About the grounds were nutmegs, mangosteens, plantains, cocoanuts, dariens, and small creepers, trained into baskets and pagodas. Inside the house the drawing room had doors sliding across circular openings. We then went on to this gentleman's private residence, entered by a Chinese triumphal gate. He tells me he has ten miles of carriage road round his estate. It is on a fine, undulating tract of land reclaimed from the jungle, and laid out with rare taste. In the outskirts a tiger killed a man the other day. In his garden I found Jacko, living in a cane cage, next door to a porcupine; there were also some rare birds. Further on some very small Berhmin bulls, a Cashmere goat, and a family of young kangaroos. There were all sorts of unknown beautiful flowers placed about in enormous Chinese vases.

Here I first saw the tea plant growing. It is of the Camellia tribe, three or four feet high, perhaps, and bears a small white flower, like an ordinary rose. Also I was shown the "moon flower," a kind of rounded convolvulus that only opens at night. There was a bower of "monkey cups," the pitcher flower which collects water, and from which Jacko refreshes himself in the jungles. The fan palm produced water by being pierced with a penknife, of a clear, cold quality.

Several minute creepers were trained over wire forms to imitate dragons, with egg shells for their eyes; and there were many of the celebrated dwarf trees—the first I had seen—little oaks and elms about eighteen inches high, like small, withered old men. The house here was superbly furnished in the English style, but with lanterns all about it. At six the guests arrived—mostly English—all dressed in short white jackets and trowsers. The dinner was admirably served, in good London style, and all the appointments, as regarded plate, glass, wines, and dishes, perfect. The quiet, attentive waiting of the little Chinese boys deserved all praise. After dinner we lounged through the rooms decorated with English prints of the Royal family, statuettes, curioso from every part of the world, and rare objects in stone and china.—*Chinese Letter.*

Landscape Gardening. — Mr. H. H. Hunnewell has given the sum of $2,000 to the Massachusetts Horticultural Society as a fund for the encouragement of the art of landscape gardening. Mr. Hunnewell, in his letter to the society, hopes the money will be an acceptable addition to the means of the society, "in meeting a want not now supplied, and will tend to the dissemination of a more correct and refined taste for elegant rural improvements than now exists, in laying out and planting our country places, which, he fears, are often the result of chance rather than any well directed plan."

Autumn Leaves.—Chromo Lithographers, with artistic pencil and inks, endeavor to imitate the beautiful colors and tints of the dying foliage, and those who buy, exclaim in ecstacies, "How beautiful." But how dull and tame they look to one who can every year see thousands of acres of uplands and lowlands glowing in the sunshine, fresh tinted and colored by the inimitable hand of Nature. To look along the slopes of hills and valeys and see nothing but a rolling sea of green, purple and gold, is a sight most beautiful, upon which to feast the eye and soul. It is a feast that kings seldom sit to, and one that we regret so few enjoy. During the next three or four weeks our foliage will present the most beautiful appearance imaginable, changing slowly from green to golden yellow, and then passing away almost in a day. We notice the past week the appearance of the first changes on the maples lining the hill sides; one a deep brilliant scarlet red, and another a soft pale yellow. Another week or two and the forests of the whole country will wear a holiday dress, reminding us of the flight of time and the approach of winter.—*N. Eagle, Pa., Sept.*

We can furnish three sets of the Horticulturist, from 1854 to 1865, inclusive, twelve volumes, uniformly bound in cloth, for Twenty-five Dollars.

Also, unbound volumes for 1858, 1859, 1860, 1861, 1862. One set only, each having twelve handsomely colored plates of Fruits and Flowers, originally published at Five Dollars per volume. Price for the set $15; bound in morocco, $20, the last set with colored plates that can be had, a splendid present. Also, a few volumes of 1856, bound and post paid, for $2 per volume.

Oneida Community.—In the notice, last month, of the Preserved Fruits put up by this Community, the statement of the number of members in the family, and the number of acres owned by them, was not correct. We give it now from the "Circular," a weekly paper published by a branch of this Community at Wallingford, Conn.

"The present number in the family at Oneida is about two hundred and thirty. They own about five hundred and fifty acres of land. It can hardly be said at present that Horticulture is their principal pursuit, though it is a leading business. For some years past their principal pursuit has been manufacturing. Next to this has been fruit-growing, and after that general farming. In

connection with fruit-growing, fruit-preserving is gradually advancing to the position of a leading business, and we have no doubt the artists in that department will continue to merit the praise, that 'whatever they do, they do well.'"

The Community have opened a place of business at No. 40 Reade Street, in this city, for the disposal of their products and manufactures, and when we are in want of anything they have to dispose of, shall give them a call.

BINDING.—We bind all volumes of the HORTICULTURIST at this office, in any style required. Volumes for 1864 in uniform cloth bindings, will be exchanged for the numbers, if in good order, and without delay, for Seventy-five Cents each. Uniform cases or covers for any volume or year, in cloth will be sent, post paid, to any address on receipt of forty cents, these can be put on by any binder.

Country Gentleman, *Cultivator*, *Gardener's Monthly*, *Hovey's Magazine*, and other Periodicals bound in any required style.

WANTED—Ten Copies Downing's Landscape Gardening, Sargent's edition, in good order, send price to this office.

CATALOGUES, &c., RECEIVED.

SELECT list of Bulbous Flower Roots for sale by Henry A. Dreer, Seedsman and Florist, No. 714 Chestnut Street, Philadelphia, very full and complete, with prices.

GRAPE VINES—Description of stock of Vines for sale at Iona Island, with some account of our four best hardy kinds. C. W. Grant, Iona, near Peekskill, N. Y.

This includes the Iona to which was awarded the $100 prize offered by Horace Greeley.

WHOLESALE Catalogue of Fruit, Evergreen and Ornamental Trees, Shrubs, Stocks, Roses, &c., for Autumn of 1864 and Spring of 1865, offered for sale by John Saul, Washington, D. C.

S. BOARDMAN & Co., Rochester, N. Y. Circular. The Honey Locust for Hedges.

PARSONS & Co., Flushing, N. Y. Trade prices of Nursery stock for autumn, 1864, and descriptive catalogue of fruit and ornamental trees, shrubs, vines, roses and exotic plants, cultivated and for sale at the commercial garden and nursery of Parson's & Co., Flushing, Long Island, near New York.

PRICE LIST for Autumn of 1864 of Trees, Vines, Plants, Shrubs, &c., at Newburgh Nursery Depot, by Dr. W. A. Royce, No. 110 Water Street, Newburgh, N. Y. Dr. Royce is prepared to supply propagators and the trade generally with buds of all varieties of Grapes, including those but recently introduced, and is prepared to fill large or small general orders for all classes of Nursery Stock.

THE ATLANTIC MONTHLY.—The November number of this valuable periodical contains as usual articles of great merit and value, the last of the House and Home Papers is specially valuable, and is worth reading by every one who has, and every one who contemplates having a home, we are glad to know that Messrs. Ticknor & Fields will soon publish all of the House and Home Papers in one volume. The price of the Atlantic Monthly is Four Dollars per annum, and is a first class investment for all who wish for sound, instructive and interesting reading matter.

THE AMERICAN AGRICULTURIST,—a monthly Journal for the Farm, Garden and Household, published by Orange Judd at 41 Park Row, New York, for One Dollar and Fifty cents per annum after Dec. 1, 1864. This paper has the largest circulation in the country, among Agriculturists, ranging somewhere in the neighborhood of 100,000 copies. The matter is all practical, fully illustrated, and treats on all subjects interesting to those who cultivate the soil.

TUCKER'S ANNUAL REGISTER OF RURAL AFFAIRS, for 1865, being No. 11, of a very valuable and profusely illustrated series of annuals. This number contains 130 engravings, illustrating articles on Country Homes, Monthly Calendar, Pruning, the Turkey, a Sheep Barn, Bee Management, Farming items and suggestions, Household Management, Rural and Domestic Economy, Cheap Piggery and Corn House, the Orchard and Garden. The chapter on Pruning gives the most complete, simple, and effective directions. Nine numbers of the series are printed on finer and larger paper, and handsomely bound in three volumes, at $1.50 each. The Annuals for 1864 and 1865, Thirty cents each, or any single number of former years can be had. We mail them prepaid to any address, from this office, on receipt of price.

COUNTRY GENTLEMEN.—One of the best weekly agricultural papers in the country, entirely devoted to this subject. Its corps of correspondents throughout the land, embrace the best agricultural writers we have. It is ably edited and valuable to all who own a home or who are interested in any department of cultivation, there is no better, safer and more profitable modé of investing money than to subscribe for a paper of this character.

A NEW MAGAZINE.—Messrs. Ticknor & Fields of Boston, announce that they will shortly begin the publication of the new illustrated juvenile magazine entitled "Our Young Folks," for Boys and Girls, to be published monthly, and conducted under the editorial charge of J. T. Trowbridge, Gail Hamilton, and Lucy Larcom, with a staff of contributors embracing many of the best known and most popular writers of juvenile works in America and in England. The very high standard to which these publishers have brought the "Atlantic Monthly," is a sufficient guarantee that they will do well whatever they undertake to do, they evidently intend to publish the most able and valuable Juvenile Magazine in the country, and from their well-known reputation and ability, we should have no hesitation in subscribing at once, without caring to see a specimen copy in advance. The price will be Two Dollars per annum, with the "Atlantic" Five Dollars per annum.

HOVEY'S MAGAZINE OF HORTICULTURE.—The three great cities of this country each boast of a Horticultural Magazine, devoted exclusively to Horticulture and its connected employments. New York has the HORTICULTURIST, Philadelphia the *Gardeners' Monthly*, and Boston, "the hub of the universe," the only city on the continent that is building a Horticultural Hall, and able to pay for it, has *Hovey's Magazine of Horticulture*, the oldest periodical of all, which is just closing its thirtieth annual volume, and from first to last under the same editorial management. This is distinct from the HORTICULTURIST, and the *Gardeners' Monthly*. The three Magazines are published in different latitudes, and view subjects from different standpoints; they are sound, able and permanent, and good horticulturists take them all. Publication price of each Two Dollars per annum. Two of them Three Dollars and Seventy-five Cents. All three, Five Dollars and Fifty Cents.

GARDENERS' MONTHLY.—This popular periodical commences its seventh annual volume with the New Year, is devoted to Horticulture, Gardening, and kindred pursuits, under the editorial management of Thos. Meehan, Esq. Its matter is nearly all original, with copious selections from the foreign journals and is distinct from the HORTICULTURIST. Published by W. G. P. Brinckloe, Philadelphia, at Two Dollars per annum. We mail it from this office with the HORTICULTURIST for Three Dollars and Seventy-five Cents per annum.

VOLUME 1853 WANTED.—Subscription for 1865 and 1866 will be given for this volume if mailed to this office prepaid.